

11A

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/757,457	POLICHAR ET AL.	
	Examiner	Art Unit	
	Khanh B. Duong	2822	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed September 28, 2005.
2. ☒ The allowed claim(s) is/are 46-61.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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**DETAILED ACTION**

***Response to Amendment***

This office action is in response to the amendment filed September 28, 2005.

Accordingly, claims 1-45 were canceled and new claims 46-61 are added.

Currently, claims 46-61 are pending.

***Allowable Subject Matter***

Claims 46-61 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record, taken alone or in combination, fairly shows or suggests all the limitations as claimed.

Re claim 46, none of the prior art of record discloses a method for forming a rectifying junction on an alloy-semiconductor material comprising a compound comprising a first component and a second component, the method comprising: photo-electrochemical removal of the first component of a first portion of the alloy-semiconductor material to form an N-type region enriched in the second component; and substantially removing the second component from a second portion of the alloy-semiconductor material to form a P-type region enriched in the first component.

Re claim 51, none of the prior art of record discloses a method for forming a rectifying junction on material, the method comprising the steps of: providing the alloy-semiconductor material having at least a first element and a second element, wherein the alloy-semiconductor has a first region and a second an alloy-semiconductor region substantially separated by an intermediate region; substantially removing the first element from the first region, wherein the removal of the first element from the first region substantially forms a region of substantially

enriched material of the second element, and wherein the removal of the first element from the first region substantially forms a negatively doped material in the first region to act as an N-type region; substantially removing the second element of the second region, wherein the removal of the second element of the second region forms a positively doped material in the second region to act as a P-type region; and providing a contact on the P-type region, wherein the N-type region, the intermediate region and the P-type region with the contact substantially form a P-I-N rectifying junction.

Re claim 57, none of the prior art of record discloses a method for forming a rectifying junction on an alloy-semiconductor, the method comprising the steps of: applying an N-type material on a first region of the alloy-semiconductor; heating the N-type material on the alloy-semiconductor; photo-electrochemical etching the N-type material; substantially covering the N-type material for protection; chemically etching a second region of the alloy-semiconductor to form P-type material; and applying a contact to the P-type material to form a P-I-N rectifying junction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following U.S. Patents teaches the use of photo-electro-chemical etching in semiconductor processing: Wang '981, Propst '627, Peeters '189 and Kohl '442. However, none

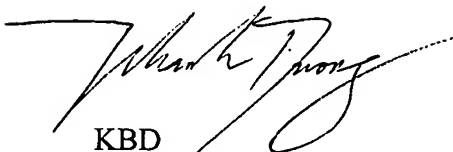
Art Unit: 2822

of the prior art of record, taken alone or in combination, fairly shows or suggests all the limitations as claimed.

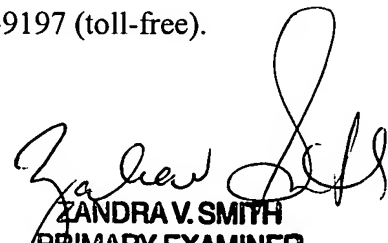
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Duong whose telephone number is (571) 272-1836. The examiner can normally be reached on 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KBD



ZANDRA V. SMITH  
PRIMARY EXAMINER  
23 Dec. 2005